

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A power monitoring system including multiple power monitoring devices; and an Ethernet communication device operative within at least a selected one of said power monitoring devices, said Ethernet communications device including:

a pair of on-board Ethernet ports for connecting said Ethernet communication device and said selected power monitoring device to an Ethernet via either twisted pair wires or optical fiber, said Ethernet ports comprising a single physical interface chip capable of supporting dual physical Ethernet media types;

an on-board serial port for connecting said Ethernet communication device and said selected power monitoring device to others of said monitoring devices connected in a daisy chain;

a processor coupled to both said Ethernet ports and to said serial port for controlling communications via said Ethernet ports and said serial port; and

a Hypertext Transfer Protocol (HTTP) server operating on said processor for dynamically gathering, formatting and verifying real-time information from both said selected power monitoring device and said other power monitoring devices connected to said serial port in a daisy chain, for communicating with an internet browser, and for accessing Hypertext Markup Language (HTML) pages.

2. (Currently Amended) The system of claim 1 wherein said processor [[is]] functions as both a master device and a slave device.

3. (Previously Presented) The system of claim 2 wherein said processor and said slave device are coupled, by said serial port, in a daisy chain and wherein said Ethernet communications device uses any of a plurality of protocols for either full duplex or half duplex communications, including SyMax, Modbus and Jbus.

4. (Previously Presented) The system of claim 1 wherein said HTTP server operates for sending data to a browser for dynamically formatting and verifying real-time data gathered by said processor and communications interfaces using JavaScript and VB script.

5. (Previously Presented) The system of claim 1, further including a web browser for accessing said HTTP server and at least one processor in communication with said HTTP server, said web browser generating a login, and said processor responding to said login by

generating an access token for said browser for permitting access by said browser for a predetermined amount of time.

6. (Canceled)

7. (Currently Amended) The system of claim 1 wherein said communication ~~communications~~ device comprises a fast Ethernet transceiver which provides a media independent interface for attachment to a 10/100 media access controller, and directly drives an RJ45 interface through magnetics and termination resistors and also provides a pseudo-ECL interface for use with 100Base Fx fast fiber transceivers.

8. (Canceled)

9. (Previously Presented) An industrial power metering system comprising:
multiple power monitoring devices; and
an Ethernet communications device within at least a selected one of said power monitoring devices;

said Ethernet communications device including

a pair of on-board Ethernet ports for connecting said communications device and said selected power monitoring device to an Ethernet via either twisted pair wires or optical fiber;

an on-board serial port for connecting said communications device and said selected power monitoring device to others of said monitoring devices connected in a daisy chain;

a processor coupled to both said Ethernet ports and to said serial port for controlling communications via said Ethernet ports and said serial port; and

a Hypertext Transfer Protocol (HTTP) server operating on said processor for dynamically gathering, formatting and verifying real-time information from both said selected power monitoring device and said other power monitoring devices connected to said serial port in a daisy chain, for communicating with an internet browser, and for accessing HTML pages, including custom HTML pages stored in the selected power monitoring device.

10. (Previously Presented) The system of claim 9 wherein said processor further functions as a slave device.

11. (Currently Amended) The system of claim 9 wherein said Ethernet communications device [[is]] uses any of a plurality of protocols for either full duplex or half duplex communications, including SyMax, Modbus and Jbus.

12. (Previously Presented) The system of claim 9 wherein said HTTP server operates for sending data to a browser for dynamically formatting and verifying real-time data gathered by said processors and communications interfaces using JavaScript and VB script.

13. (Previously Presented) The system of claim 9 and further including a web browser accessing said HTTP server, said web browser generating a login, and said processor responding to said login by generating an access token for said web browser for permitting access by said web browser for a predetermined amount of time.

14. (Previously Presented) The system of claim 9 wherein said Ethernet ports comprise a single physical interface chip supporting dual physical Ethernet media types.

15. (Previously Presented) The system of claim 14 wherein said Ethernet ports comprise a fast Ethernet transceiver which provides a media independent interface for attachment to a 10/100 media access controller, and directly drives an RJ45 interface through magnetics and termination resistors and also provides a pseudo-ECL interface for use with 100Base Fx fast fiber transceivers.

16. (Canceled)

17. (Currently Amended) An Ethernet communications method for a power monitoring system, said method comprising:

monitoring an electrical power distribution system with multiple power monitoring devices at least a selected one of which contains an Ethernet communications device having (1) a pair of on-board Ethernet ports for connecting said Ethernet communications device and said selected power monitoring device to an Ethernet via either twisted pair wires or optical fiber, (2) an on-board serial port for connecting said Ethernet communications device and said selected power monitoring device to other power monitoring devices connected in a daisy chain, and (3) a processor coupled to both said Ethernet ports and to said serial port for controlling communications via said Ethernet communication ports and said serial port; [[and]]

dynamically gathering, formatting, verifying and communicating real-time information from both said selected power monitoring device and said other power monitoring devices connected to said serial port in a daisy chain, in a format useable by Hypertext Markup Language

(HTML) pages, under the control of said processor and using a Hypertext Transfer Protocol (HTTP) server communicating through both said Ethernet ports and said serial port;

accessing said HTTP server via a web browser and generating a login, said processor responding to said login by generating an access token for said web browser for permitting access by said web browser for a predetermined amount of time; and

accessing HTML pages, including custom HTML pages stored in the selected power monitoring device, via said HTTP server.

18. (Canceled)

19. (Previously Presented) The method of claim 17 in which information is gathered from said other power monitoring devices connected in a daisy chain, and further including using any of a plurality of protocols for either full duplex or half duplex communications, including SyMax, Modbus and Jbus.

20. (Original) The method of claim 17 and further including dynamically formatting and verifying real-time data gathered by said gathering, using JavaScript and VB script.

21. (Canceled)

22. (Currently Amended) The method of claim 17 including supporting dual physical ~~ethernet~~ Ethernet media types using a single physical interface chip.

23. (Original) The method of claim 22 including providing a media independent interface for attachment to a 10/100 media access controller, directly driving an RJ45 interface and providing a pseudo-ECL interface for use with 100Base Fx fast fiber transceivers.

24. (Currently Amended) An electrical power monitoring method comprising:
monitoring an electrical power distribution system with multiple power monitoring devices at least a selected one of which contains an Ethernet communications device having (1) a pair of on-board Ethernet ports for connecting said Ethernet communications device and said selected power monitoring device to an Ethernet via either twisted pair wires or optical fiber, said Ethernet ports comprising a single physical interface chip supporting dual physical Ethernet media types, (2) an on-board serial port for connecting said Ethernet communications device and said selected power monitoring device to ~~other~~ ~~ethers~~ power monitoring devices connected in a daisy chain, and (3) a processor coupled to both said Ethernet ports and to said serial port for controlling communications via all said ports ; and

dynamically gathering, formatting, verifying and communicating real-time information from both said selected power monitoring device and said other power monitoring devices connected to said serial port in a daisy chain, in a format usable by HTML pages, under the control of said processor and using a Hypertext Transfer Protocol (HTTP) server communicating through both said Ethernet ports and said serial port.

25. (Canceled)

26. (Previously Presented) The method of claim 24 in which information is gathered from said other power monitoring devices connected in a daisy chain, using any of a plurality of protocols for either full duplex or half duplex communications, including SyMax, Modbus and Jbus.

27. (Original) The method of claim 24 and further including dynamically formatting and verifying real-time data gathered by said gathering, using JavaScript and VB script.

28. (Previously Presented) The method of claim 24 in which said HTTP server is accessed from a web browser, said web browser generating a login, and said HTTP server responding to said login by generating an access token for said web browser for permitting access by said web browser for a predetermined amount of time.

29. (Currently Amended) The method of claim 24 including supporting dual physical ~~ethernet~~ Ethernet media types using a single physical interface chip.

30. (Original) The method of claim 29 including providing a media independent interface for attachment to a 10/100 media access controller, directly driving an RJ45 interface and providing a pseudo-ECL interface for use with 100Base Fx fast fiber transceivers.

31-37. (Canceled)

38. (Currently Amended) An Ethernet communications card apparatus for a power monitoring system that includes multiple power monitoring devices, said Ethernet communications card being insertable within at least a selected one of said power monitoring devices and comprising:

a pair of on-board Ethernet ports for connecting said Ethernet communications device and said selected power monitoring device to an Ethernet via either twisted pair wires or optical fiber, said Ethernet ports comprising a single physical interface chip supporting dual physical Ethernet media types, and including a fast Ethernet transceiver which provides a media independent interface for attachment to a 10/100 media access controller, and directly drives an

RJ45 interface through magnetics and termination resistors and also provides a pseudo-ECL interface for use with 100Base Fx fast fiber transceivers;

an on-board serial port for connecting said Ethernet communications device and said selected power monitoring device to other power monitoring devices connected in a daisy chain;

a processor coupled to both said Ethernet ports and to said serial port for controlling communications via said Ethernet ports and said serial port;

a Hypertext Transfer Protocol (HTTP) server operating on said processor for dynamically gathering, formatting and verifying real-time information from both said selected power monitoring device and said other power monitoring devices connected to said serial port in a daisy chain, for communicating with an internet browser, and for accessing HTML pages, including custom HTML pages stored in the selected power monitoring device, said Ethernet communications device using any of a plurality of protocols for either full duplex or half duplex communications, including SyMax, Modbus and Jbus, said HTTP server operates for sending data to a browser for dynamically formatting and verifying real-time data using JavaScript and VB script; and

a web browser for accessing said HTTP server and generating a login, and said processor responding to said login by generating an access token for said web browser for permitting access by said web browser for a predetermined amount of time.

39-41. (Canceled)